Evaluating the Macroeconomic and Environmental impact of India's Ethanol Blending Programme - An Input-Output Framework

Topic: YSI and Development Programme I (Discussant: S. Kagawa and R. Bardazzi)
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India has set an ambitious target of achieving Net Zero emissions by 2070 which is also aligned with SDG 7 and 13. Currently, the road transport sector constitutes the second largest share of GHG emissions in the country and to this end, the Indian government has set a short-term decarbonization strategy of achieving 20% ethanol-blended fuel (E20) by 2025 under the Ethanol Blending Programme (EBP). Using the 140x66 Indian Supply Use Table (SUT) 2018-19, the study evaluates for the first time the economy-wide impact of EBP in different scenarios by introducing a to new industries (Ethanol and E5) and three new commodities (Ethanol, E5 and CO2) in the original Indian SUT. The environmental footprint analysis resulting from the ethanol industry expansion is also conducted. Results show that EBP leads to positive macroeconomic impact across Total Output, GDP and Employment by 0.197%, 0.132%, 0.175%, respectively while there is a minimal, yet net-negative impact resulting from reduction in petroleum production industry. The sugar-based distilleries supply-chain benefit the most compared to grain-based distilleries since 84% of ethanol is being produced from the former. In pursuit of Indiaâ€™s long-rum target of carbon emission reduction of 1 billion tonnes by 2030, E20-blended fuel will contribute to 3.6% of the total emission reduction, while in combination with a greener power sector will lead to 34% GHG reduction.
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